September 11–13.—Of only moderate intensity, this disturbance was first located by radio reports from the S. S. *Turpam* in 22° N., 93° W., at 1 p. m., eastern standard time, on the 11th, wind ESE., force 7, barometer 29.80, and indications that a tropical storm had formed. The S. S. *Nemaha*, at 26° N., 95° W., reported that the highest wind experienced was southeast, force 8, with lowest barometer 29.77 at 3 a. m. eastern standard time, September 13. Without evidence of increase in intensity, the disturbance moved in a general northwest direction and crossed the Texas coast near Brownsville on the 13th.

The report of Forecaster Dyke at New Orleans included the following:

The disturbance moved slowly northwestward until the evening of the 12th, when it turned to the right and moved rapidly north-northwestward, passing very close to and east of Brownsville, Tex., on the morning of the 13th, moving at the average rate of approximately 16 miles an hour from 7 a. m. of the 12th to 8 a. m. of the 13th. There was apparently little variation in intensity, as reported wind velocity and barometric pressure while the disturbance was over water and when it reached shore were about the same. Thereafter it passed inland to the west of Corpus Christi, Tex. Easterly winds of force 7 prevailed on Padre Island at Brazos Santiago Pass, 23 miles northeast of Brownsville; and westerly wind of 27 miles an hour was recorded at Brownsville at 7:48 a. m., eastern standard time, showing that the center of the disturbance, probably without a calm or lull, passed between Brownsville and Brazos Santiago Pass. A maximum wind velocity of 35 miles an hour was recorded at Corpus Christi at 12:30 p. m., eastern standard time. A wind of 30 miles an hour from the southeast occurred at Galveston before 8 a. m. The lowest pressure reported was 29.54 at Brownsville at 7 a. m., eastern standard time. Tide-gage readings on the Texas coast were not much above normal.

On indications of the 8 p. m. map of the 12th, northeast storm warnings were ordered from Brownsville to Corpus Christi. Previously in the afternoon a bulletin was sent to Galveston, Corpus Christi, and Brownsville, advising that persons on exposed islands and in boats off Texas coast from Matagorda Bay to Port Isabel should return to the mainland for the week end, due to possibility of storm increasing in intensity and curving so as to move farther north. Fortunately an increase in intensity did not occur and it became unnecessary to use United States Coast Guard planes which were sent to the Texas coast during the night but were not used for warning purposes. Persons who evacuated the islands and found shelter escaped the driving rains attending the storm.

Storm warnings were extended at night and morning of the 13th over the remainder of the Texas coast.

September 19–24.—Reports from the Leeward Islands and vessels to the northward gave some evidence of cyclone formation at about 21° N., 63½° W., at 7 a. m. of September 19. Somewhat more definite cyclonic circulation was apparently centered at about 24° N., 67½° W., at 7 a. m. of the 20th, with northwestward movement. During the 21st, very rapid development took place with recurve to the north-northeastward. As a fully developed hurricane of small diameter, it was centered close to 29° N., 70° W., at noon on the 22d.

The S. S. *Saramacca* passed through the center of the disturbance on the 22d at 28°55′ N., 69°45′ W., with lowest barometer 28.86 at noon, ship's time, and wind SSW., 12.

Near the point of recurve the hurricane moved slowly but its progressive speed increased on the 23d; and by 7 p. m. of the 24th it was approaching Nova Scotia. During the night it merged with another disturbance approaching from the westward.

September 25–October 1.—This disturbance appears to have been of minor character at all stages. Its beginnings are not clearly shown in the observations at hand. As a weak depression it moved west-northwestward across Florida on the 27th and early on the 28th, then northwestward across the extreme northeastern Gulf, and inland at Apalachicola. From the report of Forecaster Dunn at Jacksonville:

A maximum wind velocity of 26 miles from the south occurred at Tampa. * * * Tarpon Springs reported an estimated velocity of 35 miles. This storm did not give any strong winds at Apalachicola although a barometer reading of about 29.70 inches occurred early on the 29th. Except for notice of squalls in the East Gulf marine forecast, no warnings were issued in connection with this disturbance.

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By AMY D. PUTNAM

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SOLAR OBSERVATIONS

SOLAR RADIATION OBSERVATIONS DURING SEPTEMBER 1936

By IRVING F. HAND, Assistant in Solar Radiation Investigations

For a description of instruments employed and their exposures, the reader is referred to the January 1935 REVIEW, page 24.

Table 1 shows that solar radiation intensities averaged slightly below normal for September at both Washington and Madison, and close to normal at Lincoln.

Table 2 shows a deficiency in the total solar and sky radiation received on a horizontal surface at Madison, Lincoln, Chicago, Twin Falls, Miami, and New Orleans, and an excess at all other stations.

Polarization observations taken at Washington on 6 days give a mean of 55 percent with a maximum of 64 percent on the 25th. At Madison, observations on 6 days give a mean of 62 percent with a maximum of 69 percent on the 24th. These values are close to the September normals.

TABLE 1.—*Solar radiation intensities during September 1936*

[Gram-calories per minute per square centimeter of normal surface]

WASHINGTON, D. C.

Date	Sun's zenith distance: 8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon
	75th mer. time	Air mass: A. M.					P. M.				Local mean solar time
	e	5.0	4.0	3.0	2.0	[1] 1.0	2.0	3.0	4.0	5.0	e
	mm	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm*
Sept. 1	10.21	0.50	0.60	0.76	0.98	------	------	------	------	------	10.21
Sept. 4	10.21	------	------	.60	.80	------	------	------	------	------	11.81
Sept. 5	11.38	------	------	.75	.92	------	------	------	------	------	10.97
Sept. 8	14.10	.58	.70	.83	1.02	1.29	------	------	------	------	11.76
Sept. 16	14.10	------	.64	.78	.98	------	------	------	------	------	14.60
Sept. 22	16.20	------	------	.64	.85	------	------	------	------	------	13.13
Sept. 23	16.20	------	.19	.54	.69	------	------	------	------	------	13.61
Sept. 25	5.56	------	1.06	1.19	1.35	1.50	1.30	1.20	1.10	1.05	5.36
Sept. 26	7.04	------	------	------	1.00	------	------	------	------	------	8.18
Means	------	(.54)	.64	.76	.95	(1.40)	(1.30)	(1.20)	(1.10)	(1.05)	------
Departures	------	−.15	−.11	−.10	−.09	------	+.23	+.33	+.35	+.36	------

[1] Extrapolated.

TABLE 1.—*Solar radiation intensities during September 1936*—Con.

MADISON, WIS.

Date	Sun's zenith distance: 8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon
	75th mer. time	Air mass: A. M.					P. M.				Local mean solar time
	e	5.0	4.0	3.0	2.0	[1] 1.0	2.0	3.0	4.0	5.0	e
	mm	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm*
Sept. 4	10.59	------	------	.91	------	------	------	------	------	------	13.13
Sept. 8	13.61	------	.91	1.08	------	------	------	------	------	------	13.61
Sept. 17	6.02	------	------	------	------	1.46	------	------	------	------	6.50
Sept. 18	7.87	------	.79	.98	1.15	------	------	------	------	------	8.48
Sept. 21	8.81	------	.91	1.15	1.28	1.56	------	1.14	------	------	10.59
Sept. 22	12.24	------	------	------	------	------	1.17	------	------	------	17.37
Sept. 23	14.60	.62	.76	.90	1.09	------	------	------	------	------	17.37
Sept. 24	5.70	1.03	1.08	1.22	1.37	1.56	------	------	------	------	6.27
Sept. 25	6.50	.73	.81	.96	1.14	------	1.05	------	------	------	8.48
Means	------	.80	.88	1.03	1.21	1.53	(1.11)	(1.14)	------	------	------
Departures	------	−.04	−.03	.00	+.05	------	−.07	+.11	------	------	------

LINCOLN, NEBR.

Sept. 5	18.59	0.78	0.90	1.02	1.21	1.40	------	------	------	------	19.23
Sept. 9	13.61	.90	.98	1.11	1.26	1.49	1.25	1.10	0.96	0.84	13.13
Sept. 14	13.61	------	.92	1.08	1.23	------	------	------	------	------	15.11
Sept. 16	8.81	------	------	------	------	------	------	1.11	.98	.89	6.02
Sept. 17	6.76	------	1.02	1.15	1.35	1.55	1.28	1.05	.87	.76	5.16
Sept. 21	9.83	.83	.93	1.08	1.26	------	1.22	1.05	.90	.72	9.83
Sept. 22	12.24	.86	.96	1.10	1.26	------	------	------	------	------	13.13
Sept. 23	15.65	------	------	------	------	------	1.07	.80	.54	.41	6.27
Sept. 24	5.16	.84	.93	1.06	1.27	------	1.15	.93	.75	.63	4.95
Sept. 30	7.04	------	------	------	------	------	1.28	.75	.55	.49	8.81
Means	------	.85	.95	1.09	1.26	1.48	1.21	.97	.79	.68	------
Departures	------	+.11	+.11	+.12	+.13	------	+.05	−.01	−.05	−.05	------

BLUE HILL, MASS.

Sept. 1	8.2	------	------	1.10	1.18	1.28	1.02	0.88	0.77	0.62	6.8
Sept. 2	7.9	------	------	------	.98	------	------	------	------	------	10.3
Sept. 4	10.3	------	------	------	------	1.24	1.12	------	------	------	10.3
Sept. 6	10.7	0.82	0.91	1.01	1.17	1.28	------	------	------	------	11.1
Sept. 7	11.5	------	.48	.58	.76	------	------	------	------	------	12.8
Sept. 8	15.8	------	------	------	.96	1.10	------	------	------	------	17.5
Sept. 9	15.3	------	------	.67	.86	1.25	------	------	------	------	16.4
Sept. 11	11.9	------	------	------	------	1.21	.93	.73	------	------	13.7
Sept. 14	7.1	------	------	1.05	1.22	1.40	------	------	------	------	6.1
Sept. 16	12.3	------	------	------	------	1.16	.86	------	------	------	14.3
Sept. 17	14.7	------	------	.60	------	------	------	------	------	------	14.7
Sept. 19	9.6	------	------	1.08	1.25	1.44	------	------	------	------	8.8
Sept. 22	13.7	------	------	------	------	------	.91	------	------	------	11.5
Sept. 23	13.7	------	------	------	------	1.17	1.05	.92	.78	------	14.3
Sept. 24	14.3	------	------	------	------	1.35	------	------	------	------	15.3
Sept. 25	5.6	------	1.09	1.23	1.35	1.49	1.32	------	------	------	5.2
Sept. 26	6.1	------	.93	1.10	1.16	1.24	1.19	------	------	------	7.4
Sept. 28	11.1	------	------	------	------	1.44	1.18	------	------	------	5.1
Sept. 29	4.2	------	------	1.08	1.25	1.36	------	------	------	------	6.3
Means	------	.82	.85	.95	1.10	1.29	1.06	.84	.76	.62	------